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Japanese Companies Shift from Bank Credit to Security Finance

Japanese corporations traditionally have depended on banks, rather than securities markets, to finance investment. But in an NBER study, **Takeo Hoshi, Anil Kashyap,** and **David Scharfstein** observe that the use of bank financing has been decreasing. In 1971–5, banks provided 84 percent of all external financing for Japanese corporations, while in 1981–5 they provided only 57 percent.

In **Bank Monitoring and Investment: Evidence from the Changing Structure of Japanese Corporate Banking Relationships** (*NBER Working Paper No. 3079*), the authors conclude that this shift has been facilitated by a move toward deregulation of Japan's financial markets. Various changes in regulations between 1977 and 1983 made it easier for Japanese corporations to raise money from the public by issuing stocks or bonds. As a result, there has been a tenfold increase in the importance of bond financing, while the use of equity financing has doubled.

This change in financing patterns has led to a change in the behavior of Japanese corporations. The new independence may have freed corporate managers from the risk-averse proclivities of bank lending officers, but it also has tied the firms' investment plans to cash flow constraints that previously had been almost wholly absent.

Hoshi, Kashyap, and Scharfstein study 109 companies that had close banking relationships during the 1970s. In the 1980s, a majority of them (69 firms) reduced their bank borrowing, from 53 percent of depreciable assets to only 17 percent. A minority of 40 firms, however, actually raised their bank borrowing slightly, from 50 to 53 percent of depreciable assets.

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In general, the companies that depended less on banks for their debt financing had more trouble raising capital to finance investment. They had to rely more on internally generated funds to finance capital spending. As a result, companies with valuable investment prospects but without the necessary funds may have invested less than they would have liked.

By contrast, firms that continued to borrow heavily from banks had easier access to capital. Their investment appears to have been less constrained by their cash on hand.

This suggests that using the securities markets to finance investment, rather than using financial intermediaries, may have a cost. Indeed, Hoshi, Kashyap, and Scharfstein find that only companies that

were relatively confident that they would have the cash to finance investment were willing to loosen their ties with banks. The firms with greater growth prospects tended to shift away from bank financing to bond and equity financing, the authors conclude.

The fact that these companies were willing to incur additional financing costs suggests that there may be corresponding costs of bank financing. The authors speculate that reserve requirements and administrative costs raise banks' cost of capital relative to individual bondholders. In addition, corporate managers may have thought that the banks were exercising too much control over the firms' operations.

Hoshi, Kashyap, and Scharfstein conclude that the internal dynamics they have uncovered in the transformation of corporate finance in Japan may shed some light on equally dramatic developments in the United States. Here the movement is in the opposite direction, away from public markets and, through junk bonds and private placement of equity, toward a new system that gives those who provide financial resources a much greater role in the conduct of the firm. LB

LBOs May Increase Productivity

Leveraged buyouts (LBOs) may increase productivity, according to a new NBER study by **Frank Lichtenberg** and **Donald Siegel.** Between 1981 and 1986, manufacturing plants involved in LBOs had rates of productivity growth that were about 14 percent higher than other plants in their industry, they estimate.

Management buyouts (MBOs)—one type of LBO—have a particularly strong effect on productivity: the productivity growth for MBO plants is about 20 percent greater than for others in their industry. Also, plants involved in MBOs are less likely to close down after the buyout than other plants, the authors find.

In **The Effects of Leveraged Buyouts on Productivity and Related Aspects of Firm Behavior** (*NBER Working Paper No. 3022*), Lichtenberg and Siegel suggest two explanations for the increase in productivity after an LBO. First, there may be more effort on the part of labor and more utilization of all productive inputs because financial rewards (or penalties) are more sensitive to performance after a buyout. Second, as "free cash flow" is curtailed and as managers are monitored more closely by investors, fewer resources may go toward inefficient activities.

Lichtenberg and Siegel also find that the wages of nonproduction workers decline sharply after an LBO, while the wage rates of production workers increase. Thus, the ratio of nonproduction labor cost to production labor cost drops.

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They also calculate that LBO plants used less capital and labor, relative to the industry average, in 1986 than in 1981. "But the relative quantities of capital and labor employed in LBO plants were declining for several years before the buyout as well as for several years after, and the rate of decline was smaller (and less significant) after," they observe. "Thus LBOs are associated with a reduction in the rate of (relative) downsizing."

Lichtenberg and Siegel conclude that the difference in productivity growth rates between LBO and non-LBO plants in 1981–6 was caused mostly by lower input growth, not higher output growth. Finally, they estimate that the average R and D intensity of firms involved in LBOs from 1978–86 increased as much as the average for other firms.

Their results on R and D are based on a sample of 43 LBO firms and the average from a National Science Foundation/Census survey of industrial R and D. Their other findings are based on a sample of roughly 20,000 large manufacturing establishments of which approximately 1100 had been involved in major LBOs (over $35 million) in 1981–6. Their measure of productivity is total factor productivity: output per unit of total input.

The States Keep Up with the Joneses, Too

When it comes to spending programs, the states are copycats. A $1 increase in the per capita expenditure of a state's "neighbors" boosts its own spending by more than 70 cents, according to a new NBER study by **Anne Case, James Hines,** and **Harvey Rosen.**

In **Copycatting: Fiscal Policies of States and Their Neighbors** (*NBER Working Paper No. 3032*), the authors observe that states differed, often widely, in their per capita levels of average expenditure between 1970 and 1986. Year-to-year changes in those expenditures depended on economic conditions, such as changes in per capita state income and the level of grants received from the federal government, and on social factors, including changes in the fraction of the state's population that was school-aged or elderly or black.

In addition, states appeared to be affected by changes in the expenditure levels of their neighbors, Case, Hines, and Rosen find. By neighbors, though, the authors mean states that are similarly situated—not necessarily geographically, but in terms of their economies or demographics.

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In order to determine an appropriate level of spending in a given state, its citizens look at the spending of states in their reference group. For example, citi zens in New York may use spending in Michigan, Illinois, and New Jersey as a guideline. After experimenting with several alternative measures of what best describes a neighbor for purposes of spending, the authors find that similarity in racial composition —as indicated by the percentage of the population that is black—is the most significant factor. States with similar racial compositions look to each other as points of reference, they find.

Several other economic variables affect state and local spending directly. For example, when a state's population increases by one million, state and local expenditures increase by roughly $10 per person. In addition, if no other factors change, then an additional dollar of federal grant money received will raise state and local spending by 66 cents. But failure to include the influence of neighbors on a state's spending decisions leads to a substantial upward bias in the estimate of the effect of a state's grants on its expenditures, the authors find.

Allowing for the influence of neighbors is also important for analyzing expenditure categories separately. State administration, health and human services, highway and education expenditures are all influenced by neighbors' spending. Not surprisingly, the relevant group of neighbors depends on the spending category: racial composition of a neighbor will most affect a state's education spending, while geography of a neighbor is most important to a state's highway spending. DRF

Voc Ed, or Jail?

For young men who have been imprisoned for stealing, vocational education may be one way to stay out of trouble, according to an NBER study by **Pamela Lattimore, Ann Witte,** and **Joanna Baker.** Participants in a North Carolina program, Sandhills Vocational Delivery System (VDS), were more likely to complete vocational training and less likely to be rearrested after their release from detention than those who did not participate.

In **Experimental Assessment of the Effect of Vocational Training on Youthful Property Offenders** (*NBER Working Paper No. 2952*), the authors describe the vocational program that was offered to 18- to 22-year-old males in prison. It involved identifying an individual's vocational interests and aptitude; developing a personalized plan of study; providing training and services; and helping inmates secure employment after release.

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Lattimore, Witte, and Baker's sample was selected randomly from a group of prisoners who seemed likely to benefit from a vocational educational program. Enrollment in VDS began in June 1983 and continued through May 1986. An experimental group (participants) and a control group (nonparticipants) were chosen; the control group also got counseling, but it was less intensive. These two groups otherwise were identically composed in terms of age, sex, race, education, employment history, and other characteristics.

The VDS program was less than fully implemented: only 16 percent of the participants began all four types of activities. Despite this, VDS participants were more likely to complete vocational training and other programs than nonparticipants. Thirty-one percent of the participants, but only 17 percent of the nonparticipants, successfully completed one or more vocational programs. Further, of a sample of 247 young males, 36 percent who participated in the vocational training program were arrested within an average of two years of release versus 46 percent in the control group that did not participate.

Recent NBER Books

Understanding the Gender Gap

Understanding the Gender Gap: An Economic History of American Women, by Claudia Goldin, is available from Oxford University Press for $29.95.

Why do women earn less than men and have less opportunity for advancement, despite the fact that they have been entering the labor market in unprecedented numbers and with high skill levels? Goldin uses new data and innovative methods to show that women's economic status has evolved gradually over the last two centuries and that past conceptions of women workers are not easily discarded.

The book should be useful for economists, historians, sociologists, and lay readers who are interested in women's studies.

Goldin is associate director of the NBER's Program in Development of the American Economy. She also is a professor of economics at the University of Pennsylvania.

This volume may be ordered directly from Oxford University Press, 200 Madison Avenue, New York, NY 10016.

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